Instructions for CRMEP 09/01/09 Draft POST-TREATMENT checklist
FC - **FISH PASSAGE at STREAM CROSSINGS**

To be used for fish passage improvement projects at stream crossings only.

Y = Yes, the question applies and the answer is yes, comment if needed. **P** = Partially, the question cannot be answered definitively yes or no, comment suggested. **N** = No, the question applies and the answer is no, comment if needed. **D** = Don't know, the answer is unknown and cannot be found; preferable to blank. **A** = Not applicable, the question or sub-question does not apply to the feature.

See Manual Part IX and X for guidance. See below for 3-letter code key; see glossary for definitions.

THE SAME TREATMENT AREA THAT WAS DEFINED DURING THE PRE-TREATMENT EVALUATION MUST BE CONSIDERED WHEN COLLECTING THE FOLLOWING DATA. CONFIRM THAT THE FEATURE LOCATION WAS SUFFICIENTLY DESCRIBED USING THE PROTOCOL FOR DOCUMENTING THE LOCATION OF HABITAT RESTORATION FEATURES. USE LOCATION DOCUMENTATION UPDATED DURING IMPLEMENTATION MONITORING AS NEEDED.

Stream* CROSSING *questions pertain to crossings upgraded or decommissioned for fish passage reasons.

1. Refers to the performance of the crossing.
   a. Specify the current structural condition of feature: *EXCL* = (Excellent) the treatment is intact and structurally sound. *GOOD* = the treatment is intact and generally sound but some wear or undermining is evident. Components may have shifted slightly, but the treatment is intact. *FAIR* = the treatment position or condition has been altered significantly. *POOR* = the treatment is visible but has suffered significant movement or damage. *FAIL* = (Failed) The treatment is not visible or remnants are not in any form of designed configuration. (To be better defined)
   b. Visual evidence of structure malfunction or lack of structural integrity. Actual problems, list all that apply.
2. Answer Y if a back flooding weir was constructed *and* necessary to the functioning of the fish passage structure.

FISH *questions 4 & 5 pertain to adult fish.* FISH *questions 6 & 7 pertain to juvenile fish.*

3. Use the flow chart and directions on DFG Restoration Manual pages IX-31-33 to determine passage.

4/6. If listed as a goal, answer based on quantitative data or visual evidence using best professional judgment.
   a. List species, by code from Restoration Manual Appendix E, for which passage improvement is aimed.

5/7. Answer based on quantitative data or visual evidence using best professional judgment. Refers to species listed in pre-treatment questions 11a and 13a. Answer if possible, even if they were not the targeted life stage.
   a. Barrier category that now exists, enter only one. See IX-1.

Barrier Category Definitions: *Temporal* – Impassable to all fish at certain flow conditions. *Partial* – Impassable to some fish species, during part or all life stages at all flows. *Total* – Impassable to all fish at all flows.

   b. Conditions that are now blocking fish passage, enter all that apply. See DFG Restoration Manual page IX-3.

SEDIMENT DELIVERY *questions should be answered regardless of goals.*

8. Answer based on visual evidence of crossing fill entering the stream since implementation. If Y, answer a-c. See DFG Restoration Manual chapter X for guidance.
   a. Determine using visual evidence and knowledge of land use and erosion processes. Enter all that apply.
   b. Enter the estimated cubic yards delivered to the stream since implementation.
9. Estimate the potential for significant future erosion at the feature, based on observations. This is a probability estimate, not an estimate of how much erosion is likely to occur. See DFG Restoration Manual page X-A-7.
   a. Low, moderate, high likelihood of erosion. Remember, this is potential not volume. High means erosion is very likely to occur at the crossing.
10. If a goal, was potential for future erosion decreased at least one full degree of severity (e.g. reduced from high to moderate, from moderate to low, or from moderate/high to low/moderate)

CHANNEL *questions should be answered regardless of goals.*

11. Pertains to any structure prescribed to control channel bed elevation as part of a barrier modification or structure installation. Refer to design specifications.
12. Applies to features where sediment had aggraded upstream of the barrier. Post-treatment, does that sediment remain?

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13. Applies to features where there was scour, incision and/or head-cutting resulting from the barrier. Post-treatment has the channel stabilized or ceased to down cut?
14. Refers to other localized undesirable channel conditions such as braiding, flow obstructions, grade controls, undesirable lateral migration, narrowing, straightening, widening, etc. near the feature, not at a stream or reach level.
15. If listed as a goal, answer based on visual evidence using best professional judgment.
16. ***This question always applies; answer Y, N, D.*** Compare current conditions in the vicinity of the former barrier to pre-treatment conditions. Enter Y, if there were any detrimental or beneficial effects on substrate composition that were not specified in goals and explain in comments.

BANKS *questions should be answered regardless of goals.*

17. Stream bank erosion or apparent instability caused or affected by the former barrier.
    a. Location of erosion or instability relative to the former barrier. Record location as upstream of, downstream of and/or within the barrier AND left and/or right bank determined looking downstream (e.g. DNS – LBK, RBK UPS – LBK WIN – LBK). Use comment space if needed.
    b. Determine using visual evidence and knowledge of land use and erosion processes.
18. If listed as a goal, answer based on visual evidence using best professional judgment.
19. ***This question always applies; answer Y, N, D.*** Compare current conditions in the vicinity of the former barrier to pre-treatment conditions. Enter Y, if there were any detrimental or beneficial effects on substrate composition that were not specified in goals and explain in comments.

Movement of watershed* PRODUCTS *questions should be answered regardless of goal

20. Refers to an accumulation of debris, substrate, or water behind the feature.
    a. List which are impaired - debris (e.g. LDA), substrate (e.g. grade control) or water (e.g. at a dam or tide gate).
21. If listed as a goal, answer based on visual evidence using best professional judgment.

Effectiveness* RATING *is feature specific.

22. Rate the features effectiveness, not the structural condition. Keep in mind the degree to which it met the specific goals. (To be better defined)
    - EXCL = (Excellent) the project feature is performing according to objectives.
    - GOOD = there are some deficiencies in the projects feature's performance, but it is still performing in a satisfactory manner.
    - FAIR = there are some deficiencies in the project feature's performance and, these may cause problems in the future. Some characteristics of the feature, although not enough to cause corrective action at this time, require further scrutiny.
    - POOR = the feature is not performing in a satisfactory manner. Remedial action is required.
    - FAIL = (Failed) the feature has completely failed to meet objectives and/or is causing deleterious effects of habitat.
23. Enter all that apply, give details in comments.
24. Y if the feature needs or deserves further restoration effort, N if the site doesn't need further restoration or is not suitable for restoration activity.

Code definitions

ALN	Alignment problem	CHIN	Chinook salmon	CUT	Road cutbank failures
APP	Approach problem	CNR	Concentrated runoff	DBR	Debris
BAR	Lack of stabilizing vegetation, bare	COHO	Coho salmon	DIV	Stream diversion
		COR	Corroded	DNS	Downstream
CGA	Culvert gravel absent	CRS	Crushed	EFL	Earthflows and large, slow moving landslides
		CT	Cutthroat trout		

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EMG	Emergent groundwater
ENH	Enhancement
FJH	Fish jump height
FLS	Road fillslope failures
GRZ	Grazing/grazing animal
HIG	High potential
HYD	Hydrologic processes
LAN	Landing failures
LBK	Left bank
LOW	Low potential
MNT	Maintenance
MOD	Moderate potential
NON	None
NRG	Non-road gullying
NRL	Non-road (hillslope) debris landslides
NRP	No resting pool
NTG	Not to grade
OTH	Other
OVT	Overtopped
PAR	Partial barrier
PIP	Piping
PLG	Plug potential
RBK	Right bank
REP	Repair
RRG	Other road-related gullying
SBE	Streambank erosion
SBL	Streambank landslides
SCW	Stream crossing washouts (gullies)
SFE	Surface erosion
SH	Steelhead trout
SLA	Fillslope angle problem
SUB	Substrate
TEM	Temporal barrier
TOT	Total barrier
UND	Undercut/Undermined
UNS	Undersized
UPS	Upstream
USG	Unstable soils/geology
WIN	Within
WSH	Washed out
WTD	Water depth
WTR	Water
WTV	Water velocity